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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/666,298	09/21/2000	Jacobus C. Haartsen	040071-247	8507

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EXAMINER	
NGUYEN, TOAN D	
ART UNIT	**PAPER NUMBER**
2616	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/666,298	HAARTSEN, JACOBUS C.	
	Examiner	Art Unit	
	Toan D. Nguyen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21,24,26-29,32 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *19-21,24,26-29,32 and 33* is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claim 1-18 are withdrawn in view of the newly discovered reference(s) to Sarkioja et al. (US 5,774,808), Bird (US 6,519,245) and Ishifuji et al. (US 6,061,389).

Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4-6, 8-10, 13-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkioja et al. (US 5,774,808) in view of Bird (US 6,519,245).

For claims 1, 4-5 and 8-9, Sarkioja et al. disclose method for channel allocation in a cellular communication system, the method comprising the steps of:

establishing a frequency hopping traffic channel between a first and a second communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-22), the frequency hopping traffic channel having a set of the plurality of time slots (figure 3, col. 3 lines 20-24) and a first set of hop carrier frequencies within the frequency spectrum (col. 3 lines 38-42).

However, Sarkioja et al. do not expressly disclose a fast frequency hopping traffic channel, and establishing a slow frequency hopping traffic channel between a third and

a fourth communication unit, the slow frequency hopping traffic channel having a second set of hop carrier frequencies within the frequency spectrum. In an analogous art, Bird discloses a fast frequency hopping traffic channel (col. 3 line 30), and establishing a slow frequency hopping traffic channel between a third and a fourth communication unit (figure 1, reference hubs 11-13 and the mobile units 21-23, col. 3 lines 16-19, and col. 3 lines 25-28), the slow frequency hopping traffic channel having a second set of hop carrier frequencies within the frequency spectrum (figure 5, col. 5 lines 59-61).

Bird discloses wherein the step of establishing the slow frequency hopping traffic channel further comprises the step of establishing an initial location of the slow frequency hopping traffic channel according to a slow hop sequence (figure 4, col. 5 lines 24-25 as set forth in claim 4); wherein the step of establishing the slow frequency hopping traffic channel further includes the steps of determining that a time interval associated with the slow hop sequence has expired (figure 4, col. 5 lines 35-36), and adapting a location of the slow frequency hopping traffic channel according to the slow hop sequence responsive to the expiration of the time interval (figure 4, col. 5 lines 33-36 as set forth in claim 5); establishing the fast frequency hopping traffic channel between the first, the second, and the third communication unit (figure 1, col. 3 line 30); and wherein the fast frequency hopping traffic channel avoids a location of the slow frequency hopping traffic channel and wherein a beacon packet is transmitted to the third communication unit, the beacon packet containing frequency hopping related information (col. 3 lines 13-32 as set forth in claim 8); wherein the first communication

unit is a master communication unit, the second communication unit is a FFH slave unit, and the third communication unit is a SFH slave unit, and wherein the method further comprises the step of periodically transmitting the beacon packet from the master to the FFH and SFH slave units over the fast frequency hopping traffic channel, the beacon packet indicating to the FFH and SFH slave units the location of the slow frequency hopping traffic channel (col. 3 lines 13-32 as set forth in claim 9).

One skilled in the art would have recognized the fast frequency hopping traffic channel, and would have applied Bird's fast frequency hopping in Sarkioja et al.'s frequency hopping traffic channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Bird's communication system having dedicated time slots for selection signals in Sarkioja et al.'s method for channel allocation in a cellular communication system with the motivation being to provide other types of channel, such as fast frequency hopping where each time slot has a frequency hop pattern, slow or fast phase code modulation, time division, or the like could be used (col. 3 lines 29-32).

For claim 6, Sarkioja et al. disclose the step of communicating one or more first data packets on one or more of the first set of the plurality of time slots (figure 3, references TS0-TS7) from the first communication unit to the second communication unit over the fast frequency hopping traffic channel such that the initial location (figure 3, reference TS0) and the adapted location are avoided by the fast frequency hopping traffic channel (col. 3 lines 13-17).

For claims 10, 13-14 and 17-18, Sarkioja et al. disclose method for channel allocation in a cellular communication system, the method comprising the steps of:

a first, second, third, and fourth communication unit coupled together over an air interface (figure 1, references BTS and MS., col. 2 lines 42-46);

wherein the first communication unit is configured to:

establishing a frequency hopping traffic channel between a first and a second communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-22), the frequency hopping traffic channel having a set of the plurality of time slots (figure 3, col. 3 lines 20-24) and a first set of hop carrier frequencies within the frequency spectrum (col. 3 lines 38-42).

However, Sarkioja et al. do not expressly disclose a fast frequency hopping traffic channel, and establishing a slow frequency hopping traffic channel between a third and a fourth communication unit, the slow frequency hopping traffic channel having a second set of hop carrier frequencies within the frequency spectrum. In an analogous art, Bird discloses a fast frequency hopping traffic channel (col. 3 line 30), and establishing a slow frequency hopping traffic channel between a third and a fourth communication unit (figure 1, reference hubs 11-13 and the mobile units 21-23, col. 3 lines 16-19, and col. 3 lines 25-28), the slow frequency hopping traffic channel having a second set of hop carrier frequencies within the frequency spectrum (figure 5, col. 5 lines 59-61).

Bird discloses wherein the first communication unit, in establishing the slow frequency hopping traffic channel, is further configured to establish an initial location of

the slow frequency hopping traffic channel according to a slow hop sequence (figure 4, col. 5 lines 24-25 as set forth in claim 13); wherein the first communication unit, in establishing the slow frequency hopping traffic channel, is further configured to: determine that a time interval associated with the slow hop sequence has expired (figure 4, col. 5 lines 35-36), and adapt a location of the slow frequency hopping traffic channel according to the slow hop sequence responsive to the expiration of the time interval (figure 4, col. 5 lines 33-36 as set forth in claim 14); establishing the fast frequency hopping traffic channel between the first, the second, and the third communication unit (figure 1, col. 3 line 30); and wherein the fast frequency hopping traffic channel avoids a location of the slow frequency hopping traffic channel and wherein a beacon packet is transmitted to the third communication unit, the beacon packet containing frequency hopping related information (col. 3 lines 13-32 as set forth in claim 17); wherein the first communication unit is a master communication unit, the second communication unit is a FFH slave unit, and the third communication unit is a SFH slave unit, and wherein the method further comprises the step of periodically transmitting the beacon packet from the master to the FFH and SFH slave units over the fast frequency hopping traffic channel, the beacon packet indicating to the FFH and SFH slave units the location of the slow frequency hopping traffic channel (col. 3 lines 13-32 as set forth in claim 18).

One skilled in the art would have recognized the fast frequency hopping traffic channel, and would have applied Bird's fast frequency hopping in Sarkioja et al.'s frequency hopping traffic channel. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention, to use Bird's communication system having dedicated time slots for selection signals in Sarkioja et al.'s method for channel allocation in a cellular communication system with the motivation being to provide other types of channel, such as fast frequency hopping where each time slot has a frequency hop pattern, slow or fast phase code modulation, time division, or the like could be used (col. 3 lines 29-32).

For claim 15, Sarkioja et al. disclose wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots (figure 3, references TS0-TS7) from the first communication unit to the second communication unit over the fast frequency hopping traffic channel such that the initial location (figure 3, reference TS0) and the adapted location are avoided by the fast frequency hopping traffic channel (col. 3 lines 13-17).

4. Claims 2-3, 7, 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkioja et al. (US 5,774,808) in view of Bird (US 6,519,245) further in view of Ishifuji et al. (US 6,061,389).

For claims 2-3 and 7, Sarkioja et al. in view of Bird do not expressly disclose the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the first communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s. In an analogous art, Ishifuji et al. disclose the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the first

communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s (col. 2 lines 23-29).

Ishifuji et al. disclose further the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the third communication unit to the fourth communication unit over the slow frequency hopping traffic channel at a rate exceeding 5 Mb/s (col. 2 lines 23-29 as set forth in claim 3); wherein the step of establishing the location further includes reducing a number of hop carrier frequencies associated with the fast frequency hopping traffic channel (col. 1 lines 54-56 as set forth in claim 7).

One skilled in the art would have recognized the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the first communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s, and would have applied Ishifuji et al.'s transmission rate in a mobile communication system in Sarkioja et al.'s frequency hopping traffic channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Ishifuji et al.'s frequency hopping communication system and communication station in Sarkioja et al.'s method for channel allocation in a cellular communication system with the motivation being arranged so that one hop occurs within some symbols (col. 2 lines 23-26).

For claims 11-12 and 16, Sarkioja et al. in view of Bird do not expressly disclose wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots from the first

communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s. In an analogous art, Ishifuji et al. disclose wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots from the first communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s (col. 2 lines 23-29).

Ishifuji et al. disclose further wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots from the third communication unit to the fourth communication unit over the slow frequency hopping traffic channel at a rate exceeding 5 Mb/s (col. 2 lines 23-29 as set forth in claim 12); wherein the first communication unit is further configured to reduce the number of time slots associated with the set of the plurality of time slots (col. 1 lines 54-56 as set forth in claim 16).

One skilled in the art would have recognized the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the first communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s, and would have applied Ishifuji et al.'s transmission rate in a mobile communication system in Sarkioja et al.'s frequency hopping traffic channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Ishifuji et al.'s frequency hopping communication system and communication station in Sarkioja et al.'s method for

channel allocation in a cellular communication system with the motivation being arranged so that one hop occurs within some symbols (col. 2 lines 23-26).

Allowable Subject Matter

5. Claims 19-21, 24, 26-29 and 32-33 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 19 and 27, the prior art fails to teach a combination of the steps of:

determining that a frequency overlap exists between the static traffic channel and one or more of frequencies associated with the frequency hopping traffic channel; and

suspending communication on the static traffic channel during the frequency overlap, in the specific combination as recited in the claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN
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